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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,312	09/30/2003	Yehia El-Ibiary	03RE097/YOD REEL:0049	5341

7590 04/21/2006  
Alexander M. Gerasimow  
Allen-Bradley Company, LLC  
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EXAMINER
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COLON SANTANA, EDUARDO

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/675,312

Applicant(s)

EL-IBIARY ET AL.

Examiner

Eduardo Colon Santana

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Detailed Action.

**DETAILED ACTION**

1. Applicant's amendments filed on 2/03/2006 have been received and entered in the case.
2. Applicant's amendments with respect to claims 1, 17, 27, 30 and 34 have been fully considered, but are not persuasive.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. U.S. Patent No. 6,236,947.

Referring to claim 1, Dowling et al. discloses various embodiments for a motor condition and performance analyzer (see all figures, Summary of Invention and respective portions of the

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specification). Dowling et al. further discloses a system and method as depicted in figure 1, 6 and 8, wherein programming instructions are stored in a tangible medium (rom/ram) (14, 16) to be executed by processor (12). Processor (12) receives and analyzes signal inputs of current and voltage data, which are represented as a balanced set of phasors<sup>1</sup> with a positive, negative and zero sequence components. Furthermore, Dowling describes that motor efficiency<sup>2</sup> is calculated using average phasors<sup>1</sup> RMS of current and voltage. See figures 3-8, Columns 15-16, 20-25.

However, Dowling et al. does not disclose that the only measurements taken from the motor are in the couple state. On the other hand, Dowling et al. uses both uncoupled (i.e. rotor loss, stator loss, stray loss, etc.) and coupled measurement to determined motor efficiency. Now, it would have been obvious to one of ordinary skill in the art at the time of the invention to use only coupled measurements to determined motor output power, since there is no need to measure or calculate the uncouple loss to establish efficiency of the motor.

As to claims 2-4, Dowling et al. describes how to determine motor efficiency<sup>2</sup> based on the balanced set of phasors with a positive and negative sequence (see figure 8 and Col. 24, line 31 to Col. 25, line 63).

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<sup>1</sup> A complex number representing the amplitude and phase of a sinusoidal function.

<sup>2</sup> Efficiency = (Output Power / Input Power) x 100%

Referring to claims 5-7, Dowling et al. describes the input data including input current and input voltage (see Abstract), input power can be derive by well-known formulas using voltage and current. Furthermore, Dowling et al. describes the balanced set of phasors with a positive sequence being represented by current and/or voltage signals (see Col. 20, lines 61-67).

As to claims 8-12, Dowling et al. depicts from figures 1-8, a processor (12) being operable to establish a plurality of motor electrical parameters based on the balanced set of phasors with a positive sequence of voltage and current, rotor speed data, electrical resistance and reactance and motor temperature (see Col. 11-25).

Referring to claims 13-16, Dowling et al. further states the use of additional devices to detect motor input voltage, current, frequency, stator resistance, rotor speed and motor temperature (see Col. 12, line 48 to Col. 13, line 7).

As to claims 17-21 and 27-29, the method steps and the means for are obvious in the product structure of claim 1 above, in which Dowling et al. discloses obtaining stator electrical input data and decomposing (demodulating) the stator electrical input data into a balanced set of phasors with a positive and negative sequence. Additionally to establish the efficiency<sup>2</sup> of the motor Dowling et al. calculates the average phasors<sup>1</sup> RMS of the current and the voltage. See figures 3-8, Columns 15-16, 20-25. Moreover, Dowling et al. uses the measurements of the motor in a coupled state to determine motor output power (see Col. 24-25).

Referring to claim 22, Dowling describes how the output power of the motor is established based on the positive and negative sequence and motor electrical parameters (see Col. 24-25).

As to claims 23-26, Dowling describes that to establish efficiency, motor electrical parameters where used including resistance, reactance, core loss and leakage reactance (see Col. 24-25).

Referring to claims 30-33 and 34-36, a computer program is obvious in the product structures of claims 1, 2 and 27 as discussed above. Figures 1-8 depicts a processor (12) including memory (14, 16) and method steps (70-182), which are achieved by programming instructions that execute the functions described above related to decomposing electrical data into positive and negative sequence and establishing the efficiency of the motor by calculating the output power using positive and negative sequences and other motor electrical parameters. (See 3-8, Columns 15-16, 20-25).

#### ***Response to Arguments***

4. Applicant's arguments have been fully considered but they are not persuasive.

It is believe that the present claims as amended do not overcome the prior art of record.

Applicant has amended the independent claims to add the limitation: "... and based on measurements taken from the motor while coupled to a load, wherein the measurements taken from the motor while

in a coupled state are the only measurements taken from the motor to establish the motor output power."

In regards to applicant's remarks that Dowling et al. reference fails to teach or suggest the amended features is not persuasive for the following reason. One ordinary skill in the art would recognize the well-known method of Dowling et al. to obtain the efficiency of a motor, from the uncoupled loss (i.e. rotor loss, stator loss, stray loss, etc.) and the measurement taken when in a coupled state. See Col. 24, line 48 to Col. 25, line 62. At the present, if Dowling et al. would only calculate the motor output power, there is no need to take into account the uncoupled loss, therefore the only measurements (emphasis added) that Dowling et al. would use to determine the motor output power are when the motor is in a coupled state.

#### **Conclusion**

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Colon Santana whose telephone number is (571) 272-2060. The examiner can normally be reached on Monday thru Thursday 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (571) 272-2800 X.33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eduardo Colon Santana  
Examiner  
Art Unit 2837



MARLON T. FLETCHER  
PRIMARY EXAMINER

ECS  
April 13, 2006